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Sample assessment material

Cambridge Advanced National in
IT: Data Analytics

OCR Level 3 Alternative Academic Qualification
Cambridge Advanced National in IT: Data Analytics

Certificate H019
Extended Certificate H119
For first teaching in 2025

Version 2.0 (May 2025)
ocr.org.uk/cambridge-advanced-nationals

F200: Fundamentals of data analytics

Introduction

This is Sample Assessment Material (SAM) which has been produced for the OCR Level 3 Alternative Academic Qualification Cambridge Advanced National in IT: Data Analytics (Certificate) and the OCR Level 3 Alternative Academic Qualification Cambridge Advanced National in IT: Data Analytics (Extended Certificate).

The SAM is an example exam paper that we publish alongside a new specification to help illustrate its intended style and structure when a qualification is first launched. We wanted to share the story of our assessment approach with you so when you look through the paper you will find we have pointed out certain features and explained the decisions we have made.

Resources to help support in teaching different areas of content can be found on the OCR Level 3 Alternative Academic Qualification Cambridge Advanced National in IT: Data Analytics webpage under 'Planning and teaching'.

Our exam papers are developed with accessibility in mind. The Understanding the assessment guide tells you a little more about the principles and rationale underpinning our approach for the qualifications. The 'Command Words' are in both the Understanding the Assessment guide and the specification. These tell you what we mean by each command word and how students should approach the question and understand its demand.

Appendix B of the specification: Command Words, gives detail about what is expected of each command word that will be included in exams and mark schemes. You can include teaching around the expectations of these as part of your teaching.

You said, we did

During the development of these qualifications, we talked extensively with teachers, subject experts, higher education institutions and our senior assessment teams to influence their structure, content and assessment materials. We then shared our final materials with teachers to make sure that they met their needs.

You told us that you wanted the exam to take similar approaches to the exam in the current Cambridge National in Information Technology qualification. We have tried to do this by using a familiar tone and style of questioning .

You told us to keep the exam as short as possible but retain time to allow students to read the scenario and respond to questions which require a creative answer. We have done this by reducing the number of available marks to 60 and setting the duration of the exam to 1 hour 15 minutes.

You told us that scenarios used within the exams should be accessible and easy for students to understand. We have done this by only using scenarios that will be familiar to students.

Examples of your comments are placed against the relevant sections/questions.

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All students will sit the exam at the same time on the same day.

The time allowed is designed to give students approximately one minute per mark plus reading time.

If students require additional answer space, lined paper may be available at the end of the answer booklet in a live question paper. Remember the question number(s) must be clearly shown.

OCR
Oxford Cambridge and RSA

<<Date>> – <<Morning/Afternoon>>

Level 3 Alternative Academic Qualification Cambridge Advanced National in IT: Data Analytics

H019/H119 F200: Fundamentals of data analytics

Sample Assessment Material (SAM)

Time allowed: 1 hour 15 minutes

No extra materials are needed.

Please write clearly in black ink. **Do not write in the barcodes.**

Centre number | | | | | | Candidate number | | | | |

First name(s) _____

Last name _____

Date of birth | D | D | M | M | Y | Y | Y | Y |

INSTRUCTIONS

- Use black ink.
- Write your answer to each question in the space provided. You can use extra paper if you need to, but you must clearly show your candidate number, the centre number and the question numbers.
- In the live exam there might be lined pages at the end of the question paper for you to use if you need extra space. Remember, you must clearly show the question numbers.
- Answer **all** the questions.

INFORMATION

- The total mark for this paper is **60**.
- The marks for each question are shown in brackets **[ ]**.
- This document consists of **16** pages.

ADVICE

Read each question carefully before you start your answer.

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This unit is part of the Certificate and Extended Certificate qualifications.

This exam will always be set and marked by us. Exams will be available in January and June each year. Students can resit this unit and the best result will be used to calculate the certification result.

The exam will always have 60 marks. There are no sections in this exam.

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This exam will have a range of question types. Question types include:

- Forced choice/controlled response questions – these are typically worth 1 to 4 marks
- Short answer, closed response questions – these are typically worth 1 to 2 marks
- Extended constructed response questions with points-based marks schemes – these are typically worth 3 to 4 marks
- Extended constructed response questions with levels of response marks schemes – these will be worth 6 marks

These allow us to assess the following Performance Objectives:

- PO1 – Show knowledge and understanding
- PO2 – Apply knowledge and understanding
- PO3 – Analyse and evaluate knowledge, understanding and performance.

The questions will sample content from across the Topic Areas.

1 What is data?

Tick (✓) **one** box.

- A general rule ☐
- Identity of things ☐
- Raw facts and figures ☐
- Useful items about something ☐

[1]

The number of marks for a question will always be given at the end of the question and will always be right aligned.

2 In a chain of pizza restaurants, each restaurant uses a spreadsheet to keep track of their daily and weekly pizza sales.

Where context is given, this will be kept as short as possible and will only include information needed for the questions.

This is part of the spreadsheet for one of the restaurants.

Pizza sizes	Prices	Number of pizzas sold		
		Sat	Sun	Total
Small	£9.00	40	20	60
Large	£14.00	90	10	100
Total		130	30	160

(a) Identify **two different** items of **information** the restaurant can get from this data.

Where a question asks for a specific number of points, we will always put numbers or response headings against the answer lines to show where students should write each point of their response.

1 .....

.....

2 .....

.....

[2]

There is one mark awarded for each correctly identified item of information.

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The number of points needed will always be written as a word in bold.

Key words will be in bold.

(b) Identify **three different** pieces of **knowledge** the restaurant can get from the information in the spreadsheet.

1 .....

.....

2 .....

.....

3 .....

.....

[3]

(c) The chain of pizza restaurants uses big data from all their restaurants.

Explain **two** benefits of using big data to the chain of pizza restaurants.

In this question, students need to apply their understanding (PO2) by explaining two benefits of using big data to the chain of pizza restaurants.

1 .....

.....

.....

2 .....

.....

.....

[4]

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3 Complete the sentence to describe the purpose of data analytics.

Use words from the list.

You can use each word once, more than once or not at all.

analysis **calculations** **errors** **trends**

The purpose of data analytics is to apply statistical …… and

technologies on data to find …… and solve problems.

[2]

4 What is data **format**?

Tick (✓) **one** box.

- Layout ☐
- Look ☐
- Structure ☐
- Style ☐

[1]

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Where students are required to use words from a list, possible answers will be in bold.

When we ask a **complete the sentence** question, we may give a list of words in alphabetical order for students to choose from. Students should complete the sentences by writing their chosen words in the spaces provided.

For multiple choice questions, the number of boxes that students should tick will be in bold. Students should use a tick (✓) in the box to show their response. If they tick more than the number of boxes needed (in this example, more than one), they will be awarded zero marks.

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5 A travel company stores data on the holidays it offers. The data includes destinations, dates and prices. This data is **structured**.

State **two** reasons why this data is **structured**.

1 .....

.....

2 .....

.....

[2]

6 The table shows important aspects of current legislation (acts) relating to the use of data and information.

Complete the table to identify the act that each important aspect relates to.

Write the name of **one** act in each of the **three** spaces in the table.

Important aspect	Act
Gives people specific privacy rights in relation to electronic communications	.....
Protects data held by companies from hackers	.....
Gives people a right of access to recorded information held by UK public authorities	.....

[3]

This **state** question assesses PO1 - show knowledge and understanding.

When we a ask a **complete the table** question, students must write their answers in the spaces given.

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7 A flower grower is using a range of images to promote a new flower variety on their social media page.

The images are in **jpeg** format.

Explain **one** benefit to the flower grower of using **jpeg** for this purpose.

.....

.....

.....**[2]**

This explain question assesses PO2 – apply knowledge and understanding and student responses must be applied to the scenario. One mark is awarded for identifying a benefit and a second mark for an appropriate explanation of why this is a benefit.

8 A researcher is interviewing local people in the town centre throughout the day. The researcher wants to get opinions on the most suitable place for a new pedestrian crossing in the town centre.

Explain **two** benefits to the researcher of gathering data in this way.

1.....

.....

.....

2.....

.....

.....

[4]

In this question the student will be awarded one mark for identifying a relevant benefit to the researcher and one mark for an appropriate explanation of the benefit identified.

There are a maximum of 2 marks awarded for each benefit explained.

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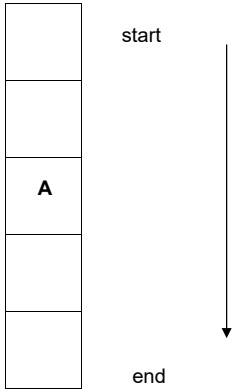
9 The **five** phases of data lifecycle management (DLM) are shown below.

The phases are **not** in the correct order.

Phase	Action
A	Usage
B	Archival
C	Destruction
D	Storage
E	Creation

Write a letter for each phase in each box to show the **correct** order.

One phase **(A)** has been done for you.



[3]

When we ask an **order the steps** question, we may use letters to label the steps. Students choose their answer(s) and write the letter in the empty space given.

One mark is given for one correct answer. Two marks are given for two or three correct answers. Three marks for four correct answers. Answers must be in the correct order.

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8

10 A large business supplies car parts. They have recruited a new database administrator.

One duty is to add data and pictures to a stock file of car parts.

(a)
(i) What **two** user rights to the computer system will the database administrator need?

1 .....

2 .....

[2]

(ii) Explain why the database administrator will need each user right in **10 (a)(i)**.

1 .....

.....

2 .....

.....

[2]

(b)
(i) State **one communication** skill that a database administrator needs.

.....**[1]**

(ii) Explain why the skill in **10 (b)(i)** is needed.

.....

..... **[1]**

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Where a response relates to a response given in another question, the question number will be in bold.

Appendix B in the **specification** contains a glossary of **Command Words** which will be used in our exams. The glossary tells you what we mean by each command word.

Where an acronym is first used in the scenario or question, we will always expand it and give the acronym in brackets afterwards. Then only the acronym will be used.

11 Complete the table to match the correct web Application Programming Interface (**API**) certification to its **use**.

Use words from the list.

Write the name of **one** API in each of the **two** spaces in the table.

Composite **Partner** **Private** **Public**

Use	**API**
Provides restricted access, intended for specific purposes	.....
Allows external users to access data or services	.....

[2]

When we ask a complete the table question, we may give a list of words in alphabetical order for students to choose from.

Students choose their response(s) and write it/them in the space(s) given.

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This is an example of a **discuss** question. The question is assessing PO3 - Analyse and evaluate knowledge, understanding and performance.

Guidance is provided for this style of question to help students structure their answer effectively.

Where the number of answer lines spans two pages, the number of marks assigned to the question will be given at the end of the question rather than at the end of the answer lines.

12 A new book-publishing company currently has seven staff in total. The book-publishing company wants to reorganise its data storage system.

Four staff work in the small main office and three work remotely from home. The company does not have dedicated IT staff. The staff mainly use word processing software, an accounts database, payroll system and an email system.

Discuss whether the book publishing company should use a Network Attached Storage (NAS) system.

In your answer you **must** write about:

- Any **benefits** for the book-publishing company
- Any **limitations** for the book-publishing company
- Whether you would recommend that the book-publishing company use an NAS **and** the reasons why.

[6]

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This is an example of a level of response (LOR) question worth six marks. This needs an extended written response. This question assesses PO3 - Analyse and evaluate knowledge, understanding and performance and responses need to include discussion. The question topic may be drawn from any relevant aspect of the unit's teaching content.

Extended response questions give students a real opportunity to show examiners the extent of their knowledge and understanding of the subject.

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Instructions for students are kept short to improve accessibility.

13 Complete the sentences to explain each job role.

Use job roles from the list.

You can use each job role once, more than once or not at all.

Data Analyst

Data Engineer

Data Scientist

Database Administrator

A.....organises and studies the data to get insight for a business.

A.....builds systems and develops algorithms to transform data into useful information.

[2]

Where a question asks students to explain, they must show (PO1) or apply (PO2) their understanding. It is not enough to recall or apply knowledge alone.

14 A new company is developing a range of new products. The company wants to develop an infographic to promote the new products on their website.

(a) Explain **two** benefits of using an infographic for this purpose**.**

1.....

.....

2.....

.....

[4]

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Where a question asks students to analyse, they must analyse knowledge and understanding relevant to the question (PO3). It is not enough to recall or apply their knowledge alone.

In this question, students need to consider how using a public cloud will impact a new company. Each impact needs to be developed in context.

12

(b) The new company is considering storing their data on a cloud storage system. Analyse the possible impacts on the new company of using a public cloud.

[6]

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This is an example of a level of response (LOR) question worth six marks. This needs an extended written response. This question assesses PO3 - Analyse and evaluate knowledge, understanding and performance and responses need to include an analysis. The question topic may be drawn from any relevant aspect of the unit's teaching content.

Extended response questions give students a real opportunity to show examiners the extent of their knowledge and understanding of the subject.

15 A college wants to create a chart showing what proportions of the total number of their students travel to college by car, bus or train. The data is in a spreadsheet.

This is part of the spreadsheet.

Method	**Number of students**
Car	80
Bus	200
Train	60

(a) State the most suitable type of chart for the data.

.....**[1]**

(b) Explain why the chart in **15 (a)** is suitable**.**

.....

.....**[1]**

16

(a) State **one** personal attribute needed for the role of Artificial Intelligence (AI) Scientist.

.....**[1]**

(b) State **one** reason why the attribute in **16 (a)** is needed.

.....

.....**[1]**

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17 A government office is updating their network system. The office stores highly sensitive data and needs to limit user access to the system.

(a) Identify the user access control that would be most suitable for the office.

.....**[1]**

(b) Identify **two** reasons that the control in **17 (a)** would be most suitable for the office.

1.....

.....

2.....

.....

[2]

END OF QUESTION PAPER

This indicates to students there are no more questions to answer.

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